

What is claimed, is:

1. Method for processing video picture data for display on  
a display device (16) having a plurality of luminous  
5 elements corresponding to pixels of a video picture,  
wherein the brightness of each pixel is controlled by at  
least one sub-field code word with which the luminous  
element/s are activated or inactivated for light output  
in small pulses corresponding to sub-fields in a video  
10 frame, the method comprising the steps of  
  
dithering said video picture data and  
  
sub-field coding said dithered video picture data for  
15 brightness control,  
  
**characterized by** the further step of  
  
transforming said video picture data according to a  
20 retinal function before said dithering step.
2. Method according to claim 1, wherein said transforming  
includes an expansion of low video levels of brightness  
and a compression of high video levels of brightness.
- 25 3. Method according to claim 1, wherein said retinal  
function for transforming input values to output values  
is  $y = a \cdot \log_{10}(b + c \cdot x)$ , where a, b, and c are real numbers.
- 30 4. Method according to claim 1, wherein said retinal  
function is applied via a look-up table.
5. Method according to claim 1, wherein weights for the  
sub-field coding are computed by using the inverse  
35 retinal function.

6. Method according to claim 1, wherein the dithering step has the characteristic that with one sub-field more video levels are rendered in the high video level range than in the low video level range.

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7. Device for processing video picture data for display on a display device (16) having a plurality of luminous elements corresponding to pixels of a video picture, comprising brightness controlling means with which the brightness of each pixel is controlled by at least one sub-field code word with which the luminous element/s are activated or inactivated for light output in small pulses corresponding to sub-fields in a video frame, including

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dithering means (12) for dithering said video picture data and

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sub-field coding means (14) for sub-field coding said dithered video picture data for displaying,

**characterized by**

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transforming means (11) for transforming said video picture data according to a retinal function before dithering.

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8. Device according to claim 7, wherein said transforming means (11) cause expansion of a low input video level range and compression of a high input video level range.

9. Device according to claim 7, wherein said retinal function for transforming input values is  $y = a \cdot \log_{10}(b + c \cdot x)$ , where a, b, and c are real numbers.

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10. Device according to claim 7, wherein said retinal function is applicable via a look-up table by said transforming means (10).
- 5 11. Device according to claim 7, wherein said sub-field coding means (14) is designed to compute weights for the sub-field coding by using the inverse retinal function.
- 10 12. Device according to claim 7, wherein the transforming means (10) cause that the dithering means (12) render more video levels with one sub-field in the high video level range than in the low video level range.